

COPY

IKEUCHI·SATO & PARTNER PATENT ATTORNEYS

26<sup>th</sup> FLOOR, OAP TOWER

8-30, TENMABASHI 1-CHOME, KITA-KU, OSAKA-SHI, OSAKA 530-6026, JAPAN  
TELEPHONE:81(0)6-6135-6051 FAX:81(0)6-6135-6052

E-mail: email@ikeuchi-sato.or.jp  
<http://www.ikeuchi-sato.or.jp/>

JAPANESE PATENT ATTORNEYS:

Hiroyuki IKEUCHI	Reiko TOTANI
Takashi HAYASHI	Yumi NAKAYAMA
Kimihiro SATO	Setsuko WAKATSUKI
Keiji TORAOKA	Ryuichiro KOGURE
Keiko KAWAKAMI	Tetsufumi YAMAUCHI
Koichiro TSUJIMARU	Tadashi OE
Hitoshi WADA	

June 9, 2005

The International Bureau of WIPO  
34, chemin des Colombettes  
1211 GENEVA 20  
Switzerland

"Amendment of the claims under Article 19 (1) (Rule 46)"

Re: International Application No./ PCT/JP2005/001464  
Applicant: MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD.  
Agent: IKEUCHI, SATO & PARTNER PATENT ATTORNEYS  
International Filing Date: 02. 02. 2005  
Our Ref.: H2295-01

Dear Sir:

The Applicant, who received the International Search Report relating to the above identified International Application transmitted on 19 April 2005, hereby files amendment under Article 19 (1) as in the attached sheets.

That is, claims 9-13 are deleted, and claims 1-8, and 14-16 are retained unchanged.

Sincerely yours,

*Takashi Hayashi*  
IKEUCHI SATO & PARTNER PATENT ATTORNEYS  
Representative Partner  
for Hiroyuki IKEUCHI

Attachment:

(1) Amendment under Article 19(1)      4 sheets

## CLAIMS

[1] A remote ultrasonic diagnostic subject-side apparatus that is used in a remote ultrasonic diagnostic system, comprising: an examiner-side apparatus by which an examiner performs a diagnosis with respect to a subject in a remote location via a communication line by using an ultrasonic image; and the subject-side apparatus on the subject side,

the subject-side apparatus comprising:

an ultrasonic wave transmission/reception portion for transmitting an ultrasonic echo that is generated from an electroacoustic converting means driven by a transmission pulse, and receiving an ultrasonic echo reflected by an inside of the subject;

an image generation portion for generating ultrasonic image data from an ultrasonic signal that is received by the ultrasonic wave transmission/reception portion;

a cine memory for sequentially storing the ultrasonic signal that is received by the ultrasonic wave transmission/reception portion per each frame; and

a communication line interface for reproducing, from the cine memory, the frame that is requested to be retransmitted by the examiner-side apparatus after freezing, and retransmitting the frame to the examiner-side apparatus via the communication line.

[2] A remote ultrasonic diagnostic examiner-side apparatus that is used in a remote ultrasonic diagnostic system, comprising: an examiner-side apparatus by which an examiner performs a diagnosis with respect to a subject in a remote location via a communication line by using an ultrasonic image; and the subject-side apparatus on the subject side,

the examiner-side apparatus comprising:

a communication line interface for requesting a communication line

interface of the subject-side apparatus to retransmit a frame to be reproduced so as to retransmit the frame via the communication line, every time after freezing when moving a pointer for designating the frame to be reproduced from a cine memory that sequentially stores an ultrasonic signal received by an ultrasonic wave transmission/reception portion of the subject-side apparatus per each frame;

an image formation portion for forming an ultrasonic image of the retransmitted frame; and

a displaying means for displaying the ultrasonic image that is formed by the image formation portion.

[3] A remote ultrasonic diagnostic system in which the remote ultrasonic diagnostic subject-side apparatus according to Claim 1 and the remote ultrasonic diagnostic examiner-side apparatus according to Claim 2 are connected via a communication line.

[4] The remote ultrasonic diagnostic system according to Claim 3, wherein

the communication line interface of the subject-side apparatus retransmits at least a part of all frames that are accumulated in the cine memory of the subject-side apparatus to the examiner-side apparatus in a background, after freezing, and

the examiner-side apparatus comprises the cine memory for storing an ultrasonic image of the frame that is retransmitted after the freezing.

[5] The remote ultrasonic diagnostic system according to Claim 3, wherein the subject-side apparatus comprises a displaying means for displaying an ultrasonic image that is retransmitted to the examiner-side apparatus.

[6] A remote ultrasonic diagnostic subject-side apparatus that is used in a remote ultrasonic diagnostic system, comprising: an examiner-side apparatus by which an examiner performs a diagnosis with respect to a subject in a remote location via a communication line by using an ultrasonic image; and the subject-side apparatus on the subject side,

the subject-side apparatus comprising:

an ultrasonic wave transmission/reception portion for transmitting an ultrasonic echo that is generated from an electroacoustic converting means driven by a transmission pulse, and receiving an ultrasonic echo reflected by an inside of the subject;

an image generation portion for generating ultrasonic image data from an ultrasonic signal that is received by the ultrasonic wave transmission/reception portion;

a cine memory for sequentially storing the ultrasonic signal that is received by the ultrasonic wave transmission/reception portion per each frame;

a displaying means for reproducing, from the cine memory, the frame that is requested to be retransmitted in the subject-side apparatus after freezing, and displaying the frame as an ultrasonic image; and

a communication line interface for retransmitting the frame that corresponds to the ultrasonic image displayed on the displaying means to the examiner-side apparatus via the communication line.

[7] A remote ultrasonic diagnostic examiner-side apparatus that is used in a remote ultrasonic diagnostic system, comprising: an examiner-side apparatus by which an examiner performs a diagnosis with respect to a subject in a remote location via a communication line by using an ultrasonic image; and the subject-side apparatus on the subject side,

the examiner-side apparatus comprising:

a communication line interface for receiving a frame that is

retransmitted from a communication line interface of the subject-side apparatus via the communication line, after freezing;

an image formation portion for forming an ultrasonic image of the retransmitted frame; and

a displaying means for displaying the ultrasonic image that is formed by the image formation portion.

[8] A remote ultrasonic diagnostic system in which the remote ultrasonic diagnostic subject-side apparatus according to Claim 6 and the remote ultrasonic diagnostic examiner-side apparatus according to Claim 7 are connected via a communication line.

[9] (Cancelled)

[10] (Cancelled)

[11] (Cancelled)

[12] (Cancelled)

[13] (Cancelled)

[14] A remote ultrasonic diagnostic subject-side apparatus that is used in a remote ultrasonic diagnostic system, comprising: an examiner-side apparatus by which an examiner performs a diagnosis with respect to a subject in a remote location via a communication line by using an ultrasonic image; and the subject-side apparatus on the subject side,

the subject-side apparatus comprising:

an ultrasonic wave transmission/reception portion for transmitting an ultrasonic echo that is generated from an electroacoustic converting

means driven by a transmission pulse, and receiving an ultrasonic echo by being reflected by an inside of the subject;

an image generation portion for generating ultrasonic image data by performing a filtering process with respect to an ultrasonic signal that is received by the ultrasonic wave transmission/reception portion;

a cine memory for sequentially storing the ultrasonic signal that is received by the ultrasonic wave transmission/reception portion per each frame; and

a communication line interface for reproducing, from the cine memory, the frame that is requested to be retransmitted by the examiner-side apparatus after freezing, and retransmitting the frame to the examiner-side apparatus via the communication line.

[15] A remote ultrasonic diagnostic examiner-side apparatus that is used in a remote ultrasonic diagnostic system, comprising: an examiner-side apparatus by which an examiner performs a diagnosis with respect to a subject in a remote location via a communication line by using an ultrasonic image; and the subject-side apparatus on the subject side,

the examiner-side apparatus comprising:

a communication line interface for requesting a communication line interface of the subject-side apparatus to retransmit a frame to be reproduced and retransmitting the frame via the communication line, every time after freezing when moving a pointer for designating the frame to be reproduced from a cine memory that sequentially stores an ultrasonic signal received by an ultrasonic wave transmission/reception portion of the subject-side apparatus per each frame;

an image formation portion that comprises a scan converting means for converting the number of scanning lines of an ultrasonic image data of the retransmitted frame, and forms an ultrasonic image by the scan converting means; and

a displaying means for displaying the ultrasonic image that is formed by the image formation portion.

[16] A remote ultrasonic diagnostic system in which the remote ultrasonic diagnostic subject-side apparatus according to Claim 14 and the remote ultrasonic diagnostic examiner-side apparatus according to Claim 15 are connected via a communication line.